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Health

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EDITORIAL

Small - Pox.

THE small-pox season has set in—the maximum incidence being reached usually in April and the minimum in October and November—and we find already cases reported here and there. An esteemed reader of 'Health' has asked us to give the public a few hints as to how to combat the disease. This disease and the method of protection by vaccination are so well known and appreciated by the public and so often dealt with in this journal that it is unnecessary for us to recount them in detail here. However, in deference to his wishes, we give below a few prophylactic measures to be adopted in a case of Small Pox.

> IN SMALL POX
>
> REMEMBER
>
> **THE THREE GOLDEN RULES.**
>
> (1) Notification of every case.
> (2) Isolation of every case.
> (3) Vaccination of every contact.
>
> —*Dr. U. Krishna Rau,* M.B., B.S.

"India has the unenviable reputation of being one of the two greatest centres if not, the greatest—of small-pox in the World",—such is the opinion expressed by the Public Health Commissioner with the Govt., of India in his Annual Report for the year 1931. The dread, disfigurement and devastation caused by Small-Pox have been recognized in this country from time immemorial and our ancients have handed down to us a set of unwritten sanitary laws which, if timely applied and

strictly adhered to, with such modifications as may be necessary to suit modern conditions, will help a good deal in warding off an epidemic.

The three principal prophylactic measures which our forefathers adopted and which modern science has endorsed are (1) isolation of the patient (2) segregation of the contacts and (3) vaccination of the unprotected. The small-pox patient, according to our ancient laws, is separated from the rest of the house-hold and kept in an airy, well-ventilated room and a piece of cloth soaked in turmeric lotion (a disinfectant) is hung over its entrance or a bunch of fresh margosa leaves placed in a prominent position in the front portion of the house, in order to distinguish the infected house from the rest and warn the public of the risk they will run if they enter it, without proper precaution. The Margosa leaves again are spread inside the sick room and the efficacy of neem as an antiseptic and a disinfectant has now been scientifically acknowledged. The modern Health Departments use stronger disinfectants now and there can therefore be no objection to these disinfectants, which are intended to prevent the spread of the disease more effectively. An elderly member of the household takes the place of nurse or attendant and all others are prohibited from entering the sick room. The relatives of the patient are strictly forbidden to enter the house. No member of the household should undertake a journey, so long as he or she is a contact. Shave or oil bath or any feast or festivity in the house is prohibited. In other words, anything which will tend to excite or depress the mind of the patient or any of the contacts is taboo. As regards diet, the patient must have kanji or cool drinks, enough of fruits, but nothing of an irritating nature. These are wise rules which our ancients formulated and which are applicable even to-day. If the patient is living in a crowded city and in an overcrowded house, he would be well advised to remove himself to the Infectious Diseases Hospital for treatment. There is always some suspicion lurking in the minds of the people that small-pox patients removed to hospitals do not recover. This is a wrong notion. In malignant type of small-pox, especially, institutional treatment is the best.

Secondly, with regard to segregation of the contacts, the necessity is apparent. It is an effective means of preventing a widespread epidemic. This may mean inconvenience to a few, but it certainly means safety to many.

As regards the third prophylaxis, vaccination, we must say that vaccination was not unknown to India. The ancient Hindus used animal vaccination secured by the transmission of the small-pox virus through the cow, long before Jenner discovered vaccination. Dhanwantri, the greatest of the ancient Hindu Physicians has described the method as follows :—

" Take the fluid of the pock on the udder of the cow or the arm between the shoulder and elbow of a human subject on the point of a lancet and lance with it the arms between the shoulders and elbows until the blood appears. Then mixing the fluid with the blood, the fever of the small-pox will be produced."

This is the vaccination pure and simple.

Thus we see that vaccination was first discovered in India and our people therefore, should not object to its use. A few figures will be found interesting here. British India stands foremost in the list of countries where small-pox is most prevalent. In 1931, the latest year for which complete figures are available, there were 88,380 cases reported. Second in the list comes 'The United States of America', where

Immunity and safety conferred by vaccination.

28,835 cases were reported during the year. The third is England and Wales whose small-pox figures went up to 5665. Fourthly, the Nertherlands, East Indies, reported 2058 cases. Scotland, New Zealand, Germany, Italy, Norway, Sweeden, and Switzerland were quite free from small-pox that year and if we trace back their history for 5 years previously up to 1925, we find the reported cases were either nil or negligibly low. France had 104 cases in 1931 while Japan had only 22. Thus it is evident that wherever vaccination was perfect and compulsory, there were fewer cases or none at all. In England and Wales and the United States, there is a good deal of opposition raised to Vaccination and we see the result. Vaccination does not confer immunity for one's life time as was supposed at one time. The period of immunity is now restricted to 7 years. If only, in times of epidemic, the entire population in the affected area get themselves vaccinated or re-vaccinated as the case may be, the danger of small pox spreading will be considerably lessened. We must, before closing, commend the following remarks of the Public Health Commissioner with the Government of India in his Annual Report above alluded to, for the serious consideration of the Public and the Press in India :—

" Despite the value of Vaccination, much organized anti-vaccinationist propaganda is let loose on the public, mainly, through certain Indian newspapers, which ought to know better and this may do much harm. Our Health Departments are waging a continual fight against the lethargy and apathy of the public in protecting themselves and their families ".

We would fervently appeal for a hearty co-operation of the public with the Health administrations, in this country, in their efforts to eradicate this dreadful malady from our midst.

The Life Gas as Disease Fighter

By

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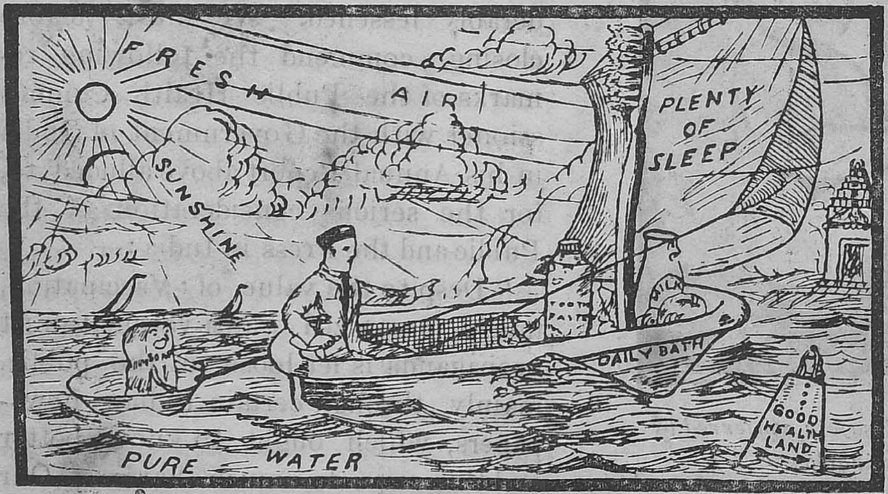
It was Joseph Priestley who discovered the life gas and it was Joseph Priestley who named it oxygen. Joseph Priestley was one of the English clergymen who had become curious about science and who as a result had made an interesting discovery. Another English clergyman whose scientific explorations had borne fruit was Dr. Stephen Hales who discovered blood pressure.



Fresh Air essential for health and life.

After oxygen had been discovered it did not take scientists a long time to find out that it was the oxygen in the air which sustained life and that without oxygen life was impossible. Not only in the air, but even in the sea. It was found that oxygen was just as essential to fish in the water as it was to animals who breathed air. It was in fact the life gas; without it life was impossible.

The Life Gas becomes a Medicine.—After it had been ascertained that oxygen was so necessary to life, doctors began to experiment to find out just how important oxygen was. They learned that mountain sickness, that strange giddiness and breathlessness that affects people who ascend to high altitudes in the mountains was all due to one thing: want of sufficient quantities of oxygen. They found that they could obtain the very same results by placing a person in a closed chamber in which the amount of oxygen had been reduced. Doctors who were particularly interested in this problem began to learn a lot of interesting things about the life gas; they began to find out just how important oxygen really was. They learned that when the oxygen level in the air was reduced the person thus subjected would begin to suffer from rapid pulse rate, bluing of the skin, disturbances in breathing, nausea and vomiting. Later there was a slight rise in temperature; the victim became very tired, became delirious and collapsed.

When the blood of such a person was analyzed it was found to contain subnormal quantities of oxygen. The entire body was oxygen starved. Not only the lungs but every fibre in the body cried for oxygen. Oxygen was not only the fuel to keep the life processes going; it was also the necessary spark.

It was the Great War which gave a powerful impetus to a further and more thorough appraisal of oxygen not only as a very vital component of the air but also as a medicine. In the year 1917 Drs. Haldane and Meltzer became firmly convinced that oxygen should be used at times as a medicine. It was Dr. Haldane, who because of this thought saved so many lives during the Great War. He invented and perfected a face mask which he used with great success in cases of lung water-logging, in cases of war-gas poisoning.

Dr. Meltzer used the life gas for the treatment of the same condition in patients with pneumonia. He obtained remarkable results in all cases and in quite a few this measure proved the only means of saving the patient's life.

With the passing of the years the value of oxygen as a medicine became more firmly established. It was found that oxygen could be used with life saving results in certain cases in which no other medicine would do much of any value. These were pneumonia and in certain diseases of the heart.

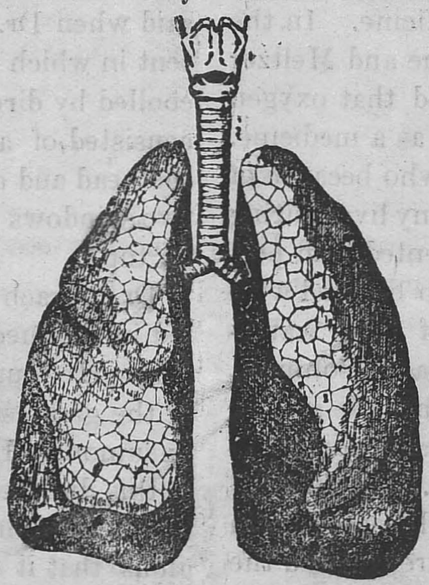
The Life Gas in Pneumonia.—Dr. Meltzer and the early users of oxygen in the treatment of pneumonia used a face mask, but as time went on it was found that much of the oxygen was wasted. More efficient means would have to be devised. The idea of a tent was suggested, and Leonard Hill constructed the first oxygen tent which consisted simply of a rubberzed fabric arranged about the patient in bed. This was the crudest sort of tent but was it far more effective than the face mask. A little later Dr. Roth improved upon Hill's tent by constructing a head tent which was smaller but a lot better than the loosely made Hill contrivance.

The final word in oxygen tents was said when Dr. Barach developed a bed tent in which the air was dried and coolled by direct passage over ice. It consisted of a square hood enclosing the head and chest of the patient with two windows in front and a window on top.

Dr. Barach had always been interested in the medicinal properties of oxygen. He found that oxygen was one of the greatest of all aids in fighting pneumonia. He treated over 300 cases of this disease by means of the oxygen tent. His enthusiasm was so contagious that it spread to other doctors. Among his most ardent followers were Drs. Stadie, Meakins, Binger and Boothby. They began to use the life gas in the treatment of pneumonia and began to get good results. They firmly became convinced that oxygen in sufficient amounts was beneficial to every case of pneumonia and proved a life saving measure to quite a few.

Dr. Barach experienced some very dramatic incidents in his oxygen treatment of pneumonia. He had eight very severe cases which he had been keeping in the oxygen tent for several days without a let up. As soon as he removed them they began to ex-

perience the most alarming symptoms and it was found necessary to put them back. There was no doubt that oxygen in these instances was saving the patients' lives. There was another case, a patient with chronic pneumonia who had to be kept in an oxygen tent for two months. On several occasions when he was removed from the tent he began to suffer such alarming symptoms that he had to be replaced at once. This was rather dramatic demonstration that oxygen was the only medicine that was sustaining him. When his lungs finally cleared, he was removed from the tent without any ill-effects.



The Lungs.

Sometimes a very severe attack of pneumonia leaves the patient with a much damaged pair of lungs. They become firm and hard instead of soft and yielding as they should be. Doctors call this condition fibrosis of the lungs. Before the days of oxygen treatment a case of this kind almost invariably ended in death. Dr. Barach with his oxygen tent has solved the problem. Such a patient must be kept in an oxygen saturated atmosphere for considerable lengths of time, sometimes as much as a year. He had several such patients. Those who had the patience to remain in the oxygen laden air survived, and those who tired of it and went into the ordinary air with their fibrotic lungs soon found themselves in difficulties. Several died. Those who had remained in the oxygen tents for the proper amount of time were able to leave and go about their daily tasks, but with much restricted activity.

The life gas in heart disease.— It was in 1908 that Drs. Beddard and Pembry found that when oxygen was given to a patient who was suffering from beginning heart failure there was a marked and immediate improvement. In 1921 Dr. Barach who had always been interested in the medicinal qualities of the life gas in association with Dr. Woodwell found that when patients with heart failure were allowed to breathe pure oxygen for periods of from two to four hours at a time there was a very happy improvement in their heart condition. Not long thereafter, Dr. Baker had a case of heart trouble known as bundle branch block, a most distressing condition, in which the heart rate is considerably reduced and which so diminishes the supply of blood to the vital organs that the patient has periodic fits of fainting. All medicines proved of little value. Finally Dr. Baker thought he would try giving the patient a few wiffs of oxygen. He was astonished by the results. The block was abolished as if by magic. The heart rate became normal and vigorous. The patient no longer had fits of fainting.

In heart disease oxygen is a veritable life saver. In that case of

heart trouble known as congestive heart failure the inability of the heart to supply the lungs with sufficient blood for oxygen carrying duties results in a condition known as dyspnœa or labored breathing. The patient becomes blue in the face for want of the proper amount of oxygen. Dr. Barach had quite a number of such cases of heart disease to treat, and he obtained most remarkable results in all of them by placing them promptly in an atmosphere of oxygen and keeping them there.

Dr. Barach found that as soon as he placed a sufferer from congestive heart failure in an oxygen tent there was a marked improvement which came on almost at once. The blue colour faded from the patient's face. He began to breathe easier. He stopped coughing. His heart ceased pounding furiously. Life became calmer and more ordered. When the patient was in extremis this measure proved to be the only means of saving his life. He was kept in the oxygen rich atmosphere until his heart was sufficiently improved to permit his removal.

In cases of heart pain due to various causes Dr. Barach found that oxygen was at times the only medicine which would calm the pain. He had three cases of hardening of the heart arteries in men past fifty. They were constantly in pain, and at times rather severe pain. Medicines proved of little help. Dr. Barach reasoned that the heart pain was due to want of proper blood supply to the heart; hence there was also a lack of sufficient quantities of oxygen. He had been getting such good results with oxygen in the treatment of other cases of heart trouble that he felt that he should try oxygen treatment in these cases.

All three of his elderly patients were put into oxygen tents where they lived for a period of two weeks. While in the oxygen tent the pain in all cases began to decrease gradually and in time the pain was gone entirely. After the oxygen treatment the patients were free from heart pain for variable lengths of time, but as the arteries still remained hardened the condition kept on recurring and repeated sessions in the oxygen chamber were necessary to keep the patient free from pain. The condition was of course never cured, but the life was made more bearable.

Dr. Barach's experience with oxygen as a pain killer in heart disease led to a most useful finding. There is at present a form of heart disease, the most terrible of all, known as coronary thrombosis. This type of heart disease affects men and women past fifty. It comes suddenly and very often kills quickly. It was this form of heart disease which killed the late President Collidge.

When the victim is seized with an attack of coronary thrombosis he feels as if his heart is being gripped in a steel vise. The pain may at times feel as if there was a powerful, all consuming fire within the heart itself. Very frequently it starts over the breast bone where it may remain or again it may spread to the left arm and shoulder.

The pain is so severe that the patient is in a state of collapse. He is ghastly pale, perspiring profusely all over, extremely anxious and exhausted. His face gradually becomes bluish grey in colour, a very characteristic

sign. The pain is so severe that the victim vomits at times. His pulse becomes feeble, and he feels that the end is near.

It was Dr. Rizer, eminent physiologist, who found that oxygen was a pain killer ; he found that heart sufferers when given oxygen to inhale were promptly made more comfortable. He advanced the theory that the pain in coronary thrombosis was due in great part to diminished amounts of oxygen presented in the dying areas of the heart muscle. The thrombosis is nothing more than a blood clot which has shut off the blood supply to a part of the heart muscles by occluding a blood vessel supplying that part of the heart. The resultant lack of blood and oxygen give rise to the most excruciating bouts of pain. The starving heart muscle begins to die rapidly if nothing is done to supply the necessary nourishing elements.

Dr. Barach at once began to advocate that all sufferers from an attack of coronary thrombosis be placed at once in an oxygen tent. Not only was pain relieved but the further degeneration of heart muscle was stayed. Dr. Barach in association with Dr. Levy found that oxygen treatment was the best medicine for this type of heart disease; there was nothing else that even approached. If it was possible to save life oxygen was the only means of doing it.

These two doctors began to treat all cases of coronary thrombosis which came their way with oxygen. They were able to save lives which otherwise would have been lost. They began to tabulate and study the effects of oxygen on their cases and they found that there was a marked improvement in all their cases, and that this occurred in from one to three hours after oxygen had been given. Restlessness and difficulties in breathing were promptly abolished.

The bluish greyness of the skin also faded away under the influence of oxygen administration. The heart became calmer and steadier ; the heart rate became slower. The heart sounds became stronger and the pulse was considerably improved. The patient is definitely taken out of danger.

Another form of heart disease in which oxygen has been found to be of value is in what doctors call angina pectoris. In this ailment there is also a considerable amount of pain, and very often an attack proves fatal. In this disease it is oxygen which more than any other means is able to save and prolong the patient's life.

Within the two hundred years that oxygen has been identified it has found many uses in almost every field of human endeavour, but it is in medicine that this life gas is proving its greatest worth. All its possibilities have by no means been explored. New uses are constantly being found for it, and in almost every case it is proving to be a medicine of undoubted worth. Only recently two physicians have been experimenting with oxygen injected directly into the lungs and have found that it is often of value, in saving the life of a sufferer from pneumonia when other means have failed.

It is most often in cases of lung and heart disease that oxygen comes to the fore as the life saving medicine. And little wonder, for it is those two organs which are so intimately

concerned with supplying oxygen to the body. It is not only the lungs and heart which require oxygen. There isn't a cell in the body anywhere which could exist for a moment without its supply of the life gas. That is why failure of either or both of these vital organs a definite menace. And that is why oxygen is the life gas. Modern medicine is now becoming more and more concerned not only with a proper evaluation of the part that oxygen plays in supporting the vital processes, but more how to adequately supply oxygen when the organ normally suffusing the body with it have begun to fail or have failed.

Diet and Diabetes

By

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THERE are two kinds of glands in the human body whose secretions are essential for the proper working and development of the body. Salivary and gastric glands pour their secretions by means of ducts into the intestinal canal and help in the digestion of the food ingested. These and such other glands are called external glands. The thyroid, the adrenalin and the pituitary come under the other group, namely internal glands, whose secretions are poured directly into the blood stream. Deficiency or over-activity of these internal glands give rise to many derangements of the human body. Pancreas is a gland in the abdomen, which functions both ways. The external secretion is poured into the intestinal canal and helps the digestion. It also secretes another secretion directly into the blood stream. This secretion is called Insulin, and its deficiency causes diabetes.

The food we take consists of three main constituents, namely proteins, fats and carbohydrates. Most of the foods contain a mixture of these three groups, but they are separated and changed to simple forms of proteins, fats and carbohydrates in the intestines and absorbed as such by the body. Meat, and other animal foods are merely made of proteins; butter, ghee and oils are completely fats, and rice, wheat and other vegetable foods contain a high percentage of carbohydrates. Milk is a mixture of all the three and so of high food-value for the vegetarians. Whatever the carbohydrate taken, it is converted into a simple form of sugar called glucose by the intestinal digestion, and this glucose is absorbed by the blood. The percentage of sugar in the blood does not go above a fixed level, and the excess of sugar is deposited in the liver, and the muscles and tissues to be burnt up when required for the supply of heat and energy to the body. All this carbohydrate metabolism is dependent on the internal secretion of the pancreas, namely insulin, and when the supply of insulin is deficient, the sugar in the blood reaches a high level which is excreted in the urine, the storage of sugar in the body is deficient and the burning of sugar for the supply of energy and heat does not take place properly. When such a state is reached, it is called Diabetes.

There is a certain amount of carbo-

hydrate food essential for each individual, increasing with his weight and the amount of physical work done. We generally take more sugar than what we require, sometimes even twice the quantity needed in the shape of sugar, rice, wheat, potatoes etc. The more the quantity of sugar taken, the more will be the demand on the insulin for the proper storage and burning of the sugar, and keeping down the level of sugar percentage in the blood. Naturally, when we take daily more carbohydrates than necessary a stage will come when the insulin secreting gland becomes exhausted due to the constant over-activity in supplying more insulin than it naturally could and when this occurs we get symptoms of diabetes. So, diabetes is essentially a disease of the rich and well-to-do, brought about by overeating of sugar and sugar-yeilding foods, which the poor men can ill-afford.

Fat in the body is partly derived from fats taken, and partly from carbohydrates. Excess of sugar taken is generally converted in the body into fat and deposited as such. So we infer that obesity is the result of taking excess of carbohydrate and a fatty person is more liable to get diabetes. But there is still some doubt about the relation of obesity to diabetes. Some say that the former is the precursor of the latter, but others dispute that both are the result of some internal secretion deficiency. Whatever be the correct theory, it is obvious that one is interdependent on the other and an obese person must be guarded against diabetes. Sedentary habit is also a predisposing cause of diabetes. Because, an active man requires more energy and so makes use of the excess of carbohydrate taken, whereas in the other the excess of sugar only increases his weight. That is why the lawyers and merchants are more liable to suffer from this disease, than those who lead an active life. But heredity must not be lost sight of in these cases. Obesity and diabetes mostly go together in the same families, perhaps due to a primary deficiency of internal glands. Members of a family with hereditary tendency must be always on the lookout and try preventive measures.

From the above discussions we conclude that the excess of carbohydrate is the most important predisposing cause of diabetes. Consequently, the treatment consists in cutting down the quantity of sugar taken. So long as the body is not able to make use of the food taken, but is only thrown out in the urine, there is no use of giving the maximum food without setting right the defect. Moreover the excess of sugar will further increase the defect. The treatment consists in allowing each individual the minimum quantity of food required. In other words, the individual must live within his means. He must take only as much food as the body can make use of, without sugar appearing in the urine. At the same time the quantity of fats and proteins must also be decreased, because the metabolism of one is dependent on another. A diabetic patient must avoid sugar and all sweet things containing sugar. But he can take any other carbohydrate diet as rice, wheat, maize, potatoe, vegetables etc., so long as the quantity does not exceed the maximum allowed for him. The space at our disposal does not

permit us to discuss the relation between weight, energy and food, proportion of protein, fat and carbohydrate required, and the different quantities of these in each variety of food-stuff.

Lastly, a word may be said about insulin. This has been extracted from the glands of animals and has revolutionized the treatment of diabetes. It is no cure, because the action lasts only as long as injections of insulin are given. But it aids our dietic treatment. It is of immense use when complications of diabetes occur, where we want to reduce sugar immediately, without weakening the patient by starving. It is also of use when a patient is not able to take the minimum quantity of food necessary without sugar appearing in the urine. In such cases, if the minimum food energy is not supplied, he will naturally lose weight. But insulin will help in taking the required quantity and utilising it for body energy. In cases of rich patients, when they do not like to be bound down to minimum requirements, insulin will be of immense help in taking a liberal diet.

The Venereal Problem

By

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THERE is a feeling current which gains strength day by day that a knowledge of venereal diseases is not to be confined to medical men only, but that it is an important subject which should be understood by the lay public as well and that the physician and the patient should acquaint the mass mind as regards their incidence and prevention.

It is oftentimes seen that a person suffering from venereal disease is viewed as a moral 'leper'. The patient thinks that he has committed an unpardonable sin and surmises that society howls at him and shuns him. Accordingly he tries to be screened from public gaze, and with the 'hidden plague' firmly rooted in him, he is loath to consult a medical attendant.

The average medical practitioner is content with his curative treatment. He gives his patient some injections periodically and when his time table of work is finished, the patient is discharged fit. Generally no pains are taken to confirm by bacteriological diagnosis whether the patient is free from the disease. The patient returns home with blankness writ large in his mind not knowing anything about the ætiology and prevention of these diseases. The only prevention he knows is 'the treatment' by his doctor.

Thus we see that the patient, the physician, and the public are responsible for the incidence and propagation of venereal diseases. If the patient knows how to prevent a venereal sore, or a gonorrhoeal discharge, if the

physician teaches every patient he comes across as to the immediate prevention during and after exposure and if the public are tolerant upon these 'wrecks' of society, the veil enshrouding the mystery of these diseases will certainly be lifted.

But why should the patient, the physician, and the public try to tackle this problem, and what is their concern? These may be a few of the questions which may pertinently be put up by anybody. The reason is that venereal diseases have a deleterious effect upon the Nation and the State. The patient is a member of the State whose concern is to look after the health of its subjects. Thus the earning capacity of the individual is minimised, nay, altogether lost. He depends on others for his maintenance, temporary though it may be, and causes an added expense to his family, and a burden to the State, both of which have to provide him food, shelter, treatment etc. So, the loss of earning capacity of the patient tells upon the State's purse. Further the sickness of an individual affects healthy fellow-dwellers. The suffering sick, the convalescent sick and the 'cured' sick are physiologically unhealthy and are incapable to do any work of Industry or Agriculture. Intellectual keenness gives place to apathy and dullness. The sum total is the decline of man-power to the state or reduction in State's earnings. If the disease assumes an epidemic proportion, then several individuals are disabled and most of them die. This is of course a serious dead loss to the Nation. The State loses its manifold earnings in proportion to the loss of its manpower.

We shall now seriously consider the bad morality associated with such a State. It is rather an unhappy title; but all the same it has perforce to be tolerated. It is true that ones' nerves would be highly stung if his country were dubbed as an immoral one and certainly his blood would be boiling to the maximum point. Let us therefore avoid such a state of affairs. Let there be a close co-operation between all the three vital elements *viz.*, the patient, the physician and the public.

And for this, the aid of preventive medicine is sought. Our goal is to see that a society is formed where no member is ill from this serious national menace. Measures that are at present in operation are not at all enough. More radical means should be adopted for unearthing this hidden plague. The aid of the best brains in the country should be sought to form an ideal society where every member is free from the venereal touch.

Men die because they don't know how to live. Teaching people how to live must become the job of the Medical Profession.—Gilbert Fitz-Patrick.—American Medicine.

Sing Your Way to Health

By

L. E. EUBANKS

SINGING, I believe, is the most healthful of all exercises. In close observation over a period of fifteen years I have not seen nor heard of a professional singer who was not far above the average in health.

Further, practically all who take up singing and stick to it for as long as six months make remarkable physical gains. I have personally seen two young men, two young women, and a woman of forty-three convert themselves into healthy, robust persons from a condition of frailty solely by singing and the care of the health that this art involves.

The reasons for such effects are both psychological and physiological. The difference between play and work, as physical developers, has long been recognized by physical educators, and there exists a similar difference in favour of singing over any other form of lung culture. Music is joyous; the healthy, happy person sings, whistles, makes music of some kind or goes to hear others make it. Happiness makes you sing, and singing certainly tends to make you happy—and healthy.

One of the body's most vital functions is respiration, and singing is primarily a matter of breathing. Every respiratory muscle is exercised and developed and the vocal organism brought to its greatest perfection. You have never seen a distinguished singer with shallow lungs and a cramped chest. Large lungs and an erect, natural carriage are the foundation of vocal music—he who sings must have them, either naturally or by cultivation.

The diaphragm is a most important muscle and any person who cares to make the experiment will find that regular and proper daily exercise of this muscle is a great aid to keeping him in excellent health, for proper diaphragmatic action is concerned in digestion, assimilation, and elimination, also. Correct diaphragmatic breathing exercises the entire internal system as well as supplying the system with a greater percentage of oxygen for the effort involved than is supplied by chest breathing.

Thousands of people go through breathing exercises assiduously without deriving the desired results. The reasons for failure are that they do not put the mind on it, and secondly, it is an arduous task rather than a pleasure. Singing is a joy, a game instead of a task, and it accomplishes the same end far more effectively.

A large chest measurement is supposed to indicate health and strength. This may or may not be true; it depends on what makes the bulk. It is not uncommon for a male singer's chest to measure forty-odd inches, and in his case size does mean health and vitality. On the other hand, some muscular marvel may have as large a chest and die of tuberculosis.

The difference is that the singer's chest is developed "from the inside." He has lung volume, while the "strong man's" girth may be made up principally of external muscles, on chest, back, and under the arms. With

these muscles the latter can show a chest expansion of from ten to twenty inches, as, perhaps, against the singer's four or five inches.

But real lung capacity is measured in volume. Sandow could expand his chest eighteen or twenty inches, but his lung capacity was only 260 cubic inches—no larger than the average man's. I myself can register 350 cubic inches, and I am sure there are many singers who can "blow" over 400. Though breath-holding for extreme periods is not to be recommended, singers can stand this lung test better than any other class, unless it be pearl-divers.

Those who take up singing have, of course, to live right if they expect worth-while results. And it is significant that they do so with less remonstrance, less feeling of martyrdom, than most other health culturists—another proof of the attractiveness of vocal ability.—(*Good Health, London.*)

The Health Audit.

By

F. A. ZOLLER, M. D.,

Maryville, Tenn.

THE universal inquiry concerning one's health has been the custom of civilized races since time immemorial. The salutations of greeting and farewell by the usual clasping of hands are but its ceremonial form. For what are "How do you do" or even "Howdy?" but questions relating to one's physical or mental condition? Then, if we are anxious about the fine conditions of one another, how much more should we be informed concerning ourselves? Yet what do we know? And how can we know unless we wisely undergo a health audit periodically?

There are but two ways by which human health is conserved. The first is the paradoxical absurdity of choosing our ancestors. However should we be enabled to exercise this impossibility, we most certainly would not select those individuals for our parents in whom there is the slightest tinge of tuberculosis, cancer, insanity, paralysis, syphilis or suicidal manias, for these weaknesses of parents may predispose their offspring to similar conditions. Then we, being wholly unacquainted with the physical abnormalities of our progenitors, are unknowingly susceptible to certain diseases which, if ignored and not treated, may develop a preventible disease and bring us prematurely to an untimely end.

Prudence dictates that an automobile should undergo a thorough inspection occasionally, but especially before a long journey is begun. But what journey to one is longer than the anticipated journey through life and what mechanical arrangement is more complicated than the human machine? It should be periodically inspected.

Due to the predominating physical disabilities of the "flower of our American manhood," those men between the ages of 18 and 31 years, one-third of them were rejected on their first examination for war service. And in consequence of this primary physical standard for gauging the civilian for military life was necessarily lowered by the government in order to mobilize

an army. Where would the general public stand under a war inspection ?

"He that is whole needs no physician, but he that is ill": this was written during a period of the world's history when the means and methods of preventing diseases were unknown.

The modern conserving of a vigorous life is due to a periodical physical examination and the annual health audit by your family physician.—*The Medical World.*

A Brahmin Questions Sir Wm. Erskine

The following was the conversation of Sir William Erskine with a Brahmin schoolmaster:

"You are a vegetarian yourself," said the Hindu, "and you will pardon me for asking you a question that has been on my mind for a good many years. There is no doubt that your countrymen are the bravest, the proudest, and the most learned inhabitants of this earth, as they are surely also the wealthiest and most powerful. How is it possible that such people could fall into a bestial aberration of devouring the flesh of their fellow-creatures —of killing gentle cows and helpless lambs for their daily food, and even fattening on the carcasses of such loathsome brutes as hogs? How can they help preferring the abundance of delicious vegetable food which the wealth places at their command in a country like this? Though the greatest puzzle of all is the question about the origin of the horrible practice. Have they no human hearts to yearn toward their slaughter-doomed fellow-beings? No human stomachs to revolt at the sight of gore? How many thousand times sooner would even famine tempt our own people to still their hunger with grass seed and raw herbs! I have often lain awake at night and pondered on those questions, and it seems to me as if the rage of revenge could possibly tempt me to devour the flesh of a mortal enemy, but I do not see how anything but madness can drive a man to use his teeth on the bodies of his own domestic cattle."—*Good Health, U. S. A.*

A DOG TALKS

Neela Braddy, in her interesting story of the life of Anne Sullivan Macy, the gifted trainer of Helen Keller, mentions that she was very fond of dogs and says of one of them :

"The most notable was a Great Dane whom—it is difficult to make people credit this—she taught to say: Ma-ma.' The dog also asked for water by pronouncing :—'Wah-ter,'"—(Good Health U. S. A.)

The Health Alphabet

A stands for Air, breathe deeply and well,
New vigour will flow thro' each living cell.

B for the Blood-stream, when that is kept clean,
The body is healthy and temper serene.

C is for Cereals, they're better than meat.
Without them your diet would be incomplete.

D for the Dairy-foods, eggs, butter, cream,
For nourishing values, these stand supreme.

E is for Energy, vim, and zest,
Put these in your life, and work at your best.

F is for Fruit, a fine thing to eat,
Choose it when ripened, juicy, and sweet.

G stands for Gaiety, cheer up and smile
'Twill aid your digestion, and make life worth while.

H is for Hiking, a jolly good sport,
It makes you feel splendid, and costs you naught.

I for Intelligence, diet with care,
Use foods that will cleanse, and also repair.

J is for "Jerks," do some every day,
They make you feel peppy, and fit for the fray.

K is for Knowledge, of how to live well,
Discretion and wisdom their story will tell.

L is for Light, the sun's healing rays,
Will strengthen and vitalise, lengthen your days,

M is the Medicine Dame Nature supplies,
You'll use her prescriptions, if you are wise.

N stands for Nerves, good temper's the balm.
That prevents them from fraying and keeps them calm,

O for an Orderly habit of life;
Good health comes with poise and freedom from strife.

P Perseverance these things to acquire
For so will your standard of health become higher.

Q is for Quietness, the last thing at night;
So will your slumbers be peaceful and light.

R for Renewal of tissues and cells,
Pure food and fresh air is the treatment that tells.

S is for Stretching, an excellent thing,
'Twill make your limbs light, and suppleness bring.

T is for Temperance, this virtue employ,
And, in moderation, all good things enjoy.

U 's Understanding, of health and its ways,
No need to be "cranky" or make it a craze.

V is for Vitamins, watch out for these
Balance them nicely, and banish disease.

W for Walking, do plenty of that,
It's the best way to "slim," if you're getting too fat.

X is for 'Xquisite radiant health,
Ours for the taking, 'tis nature's true wealth.

Y is for Youth, which you may retain,
If wisely and well your body you train.

Z is for Zeal, such fitness to tell,
That each day you'll say, "I'm

HAPPY AND WELL!"

ANNE ETHERLEY.—(*Health for All.*)

Good Water

THE family doctor is neither an engineer nor a chemist, but he is vitally interested in what others are doing for public health. The subject of sewage disposal is rarely encountered in our professional discussions, yet it is of vital importance to our health and welfare. Every city and village is responsible for the maintenance of of proper sanitary conditions within the area of its jurisdiction. It should, therefore, furnish general supervision over the operation and maintenance of of all local installations for the disposal or treatment of polluting wastes in order that effective results may at all times be secured.

In small communities sewage disposal is grievously primitive, insanitary and definitely dangerous to public health, and in rural districts sanitation is often unspeakable. Each year during the spring rains and the rising rivers wide areas are inundated, privies and stables are flooded and the filth is washed out upon walks and roads over which people must travel and work. This annual broadcasting of disease goes on in many districts, and with the increasing popularity of swimming pools, tourists' camps and recreation centres it becomes a public menace which demands adequate and prompt collection and disposal of sevage everywhere.

Emptying untreated wastes into the river (water carriage) relieves the local community, but it ravages and destroys miles of natural river beauty, replaces clear, sparkling streams with black, foul smelling, scum covered open sewers, the banks of which are filled with dirty sludge from which putrid gases escape. The normal clean stream plant and fish life is replaced with gray growths and slime. Typhoid fever and dysentery germs multiply here, and people who camp beside, bathe in, or otherwise consume its waters are subject to epidemic disease, and furthermore, our milk supply, upon which we so much depend is jeopardized when the cattle pasture along its banks.

There are less than 200 municipal sewage treatment plants in Illinois, thus evidencing that we do not yet realize the danger in our midst. If our wastes are treated so as to remove the solid and dissolved matter, and destroy the virulent bacteria it may then be discharged into a flowing stream without causing to sludge covered banks emitting foul effluvia to assail our nostrils and endanger our health and lives. It is therefore imperative that every doctor actively interest himself and hereself in adequate sewage disposal that this ever present health hazard may be removed. Don't be "asleep at the switch." If your community is discharging its untreated sewage into a river apply the "Golden rule" to your neighbour down stream and work for a sewage reduction plant and a water supply that is not only safe to drink but clear, cool and attractive to the eye and taste. Not one so polluted that fish commit suicide by entering it. Pure food, pure water, and pure air are essentials. The food and air may come from great distances, but the water (neglecting rain water) must come from some nearby source, frequently so near that it receives the pollution from the cities and industries. We expect and demand that water be given us that is pure and palatable. Nothing short of this should be considered as the solution of the problem:—*The Illinois Medical Journal.*

Health Tit-Bits

Page-licking.—A few generations ago we spat as unconcernedly as we cough now. Public opinion now brands promiscuous spitting as a dirty and dangerous habit. The man who still dares to spit in a public conveyance has an inferiority complex tacitly thrust on him by his disgusted fellow travellers. But public opinion has not yet been effectively mobilised against another dirty and dangerous habit—page-licking. We still see so-called cultured and educated persons licking pages, while turning them over, blissfully unconscious of the enormity of their offence. *Had they learnt to think bacteriologically* they would know that there are live germs on every person's tongue. These germs may be harmless to the tongue's owner, but not to his neighbour. As a person licks a finger and then dabs it on a page, some of these germs are transferred to it. Comes the next page-licking reader who picks up his predecessor's germs and transfers them to his own tongue. And so this dirty game goes on. The much-licked page becomes a market for the exchange of germs. So does the much-licked pencil.—*The Australian Red-Cross.*

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Internal Sun Baths.—Dr. Joseph Mandelbaum has produced a device by which a person may take internal sun baths. This is a tiny gas lamp which radiates ultra-violet rays. It is swallowed by the patient. The rays may be directed exactly upon the diseased spots for periods up to three minutes. This treatment is expected to help in the fight against tuberculosis.—*The Treasure Chest.*

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The Mango Rich in Vitamin C.—Doctor Victor Levine of Crighton University stated at the recent Congress of Physical Therapy held in Chicago, that the mango contains nearly twice as much vitamin C as does the orange or the lemon. This ought to encourage the fruit growers of South Florida.

In this little corner of the United States, the mango flourishes as well as in Cuba and other portions of tropical America. Its rich, delicious flavor is unmatched by any other fruit except the mangosteen.—*Good Health.*

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The Falling Birth-rate.—Prof. J. J. Jervis, M.O.H., has pointed out that at Leeds in 1932, the birth-rate continued its downward trend and reached a point lower than ever before. He continues: This reflects two things, first, the unfavourable influence of the economic situation on family life, and secondly, the shrinking fertility of modern marriages. It is very striking how little the marriage rate has varied in the last twenty years as compared with the birth-rate which in the same period has dropped more than 37 per cent. It would appear, therefore that the need to-day is not to instruct young people how not to have children, but rather how to have them in sufficient number and of the best type possible to maintain a population numerically and physically effective. The disappearance of the family in its effect on the

individual and the community is one of the most sinister and regrettable features of the age. That it should be encouraged, as it undoubtedly is being for purely personal and private motives is greatly to be deplored."—*The Medical Officer.*

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Bacillus Prodigiosus.—A rather interesting matter came to light at Dover last year in consequence of a complaint originating from an Institution in the town, that meat cooked and stored in the larder of the premises had on several occasions showed signs of decomposition, and displayed a pink colouration. The person in charge of the establishment was inclined to blame the butcher for supplying contaminated meat; but careful investigation and bacteriological examination of a sample showed that the organism responsible was the Bacillus Prodigiosus, known as the "miracle organism" which also produces red colouration of bread in certain circumstances. Inspection revealed the fact that a sink supplied with hot water was actually in the pantry, and that the surrounding woodwork was saturated and rotten. Dr. A. B. McMaster M. O. H. reports that fumigation with sulphur dioxide and removal of the rotten woodwork, were carried out and a properly constructed and ventilated larder built in the yard. No recurrence of the trouble has arisen.—*The Medical Officer.*

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Substitutes for Tea and Coffee:—

As to substitutes for tea and coffee there are none that will at first satisfy the habitual user unless they contain the drug caffeine. It is now possible to obtain a coffee that has had ninety-seven per cent of the caffeine removed and some of its tannin. Harmless substitutes such as roasted grains, barley, bran, roasted soya beans, chicory, dandelion coffee, or certain commercial products, such as Instant Postum, made of the above-named articles are free from caffeine and tannin.

Tea has not yet been successfully de-caffeinized, and the so-called health teas, as well as China tea, all contain large amounts of caffeine, although their tannin content may be less.

Some claim that in their particular tea tips or tea points, because the ratio of caffeine to tannin is one to three, or three per cent caffeine to nine per cent tannin, the resultant caffeine tannate is non-injurious. Theoretically, this is a good selling point, but in practice individuals using them have the typical withdrawal symptoms when the beverage is stopped, showing that the effect of the caffeine is there, and if it were not there, there would be no sale for the tea.

Harmless substitutes include fig tea (roasted dried figs), bran tea, apple tea, raspberry and strawberry tea (made from the dried leaves and used commonly in Denmark), lime tea and camomile tea (used commonly in France), and others.

Another point one should bear in mind is that caffeine dissolves very rapidly in hot water and the so-called weak tea, which most moderate tea-drinkers claim to drink, still contains a relatively high percentage of caffeine, although the tannin content is reduced.

—*Good Health, (London).*

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How to keep fit.—In view of the many handicaps to health (due to artificial living), the problem of how to keep fit is an ever-pressing one. Yet it is not a difficult matter if a few simple rules are observed daily. Let us take a leaf out of the book of Miss Diana Wynyard, the actress. Her rules for maintaining fitness may briefly be summed up as follows: (1) Don't over-eat; (2) Never eat between meals; (3) Avoid heavy drinks; (3) Avoid drinks; (4) Have some form of "roughage" to keep the digestion functioning normally; (5) Eat starchy foods in moderation; (6) Eat plenty of green salads and fruits; (7) Have sufficient rest and sleep; Dont worry about your health. As her job does not allow her to take much exercise, she has half an hour's massage every morning, and whenever she gets the chance at week-ends she rides. Although the two latter forms of exercise may not come within the scope of the majority, the best and most natural form of exercise, that of walking can be enjoyed by practically everybody, and of course, the health benefits to be derived from the regular practice of deep breathing should not be overlooked.—*Health for All.*

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Exercise by diabetics.—It is well known that diabetics in whom the urine is made sugar free by the use of insulin, require smaller doses of insulin when the amount of muscular exercise is increased. On this account, every person suffering from this disease should with the aid of a competent physician, arrange a systematic program of exercise which should be faithfully carried out every day. In the case of a feeble person, the amount of exercise taken should be carefully graduated from day to day.

Systematic exercise is highly important for the diabetic, not only as an aid in burning up the blood sugar but as a means of keeping the heart and blood vessels in a healthy state.

It is well known that in this disease there is a tendency to arteriosclerosis. The blood vessels of the legs are usually the first to be attacked. Cutting off the blood supply to the lower extremities is the cause of gangrene of the toes. X-ray examination of the legs of diabetics often discloses the presence of changes in the arteries which are visualized by the X-ray, because of the lime deposited in their walls.

In walking, the muscles become filled with blood. The blood vessels are well distended and the degenerative process checked. Exercise also strengthens the heart, aids digestion, and promotes general bodily health.—*Good Health.* (*U. S. A.*)

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Chronic tobacco poisoning.—F. Cramer takes a grave view of the dangers of using tobacco in any form. Beginning with the statement that nicotine is as poisonous as cyanide of potassium, he asserts that a hundred cigarettes smoked in the course of a day are almost certainly fatal, and points out that the blood of a regular smoker causes a leech that sucks it to die in convulsions. Angiosclerotic dyspepsia is the commonest result of smoking (especially of cigars in which most of the nicotine remains in and can be recovered from the stump), leucoplakia, cardiospasm, achylia, and hiccough being frequent. Spasms of the sphincter ani, eventually leading to hæmorrhoids, often arise in tobacco addicts, while intestinal ischæmia causing spasms, meteorism, and alternate conditions of constipation and diarrhœa with offensive motions are not uncommon. However Cramer admits that the personal factor may modify these troubles considerably and states that he himself is unable to smoke more than two cigars.(*Munich : Munchener Medizinische Wochenschrift*:—*The Illinois Medical Journal.*